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Important Facts

RELATING TO

The Hudson Bay Railway

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The Hudson Bay Railway

INTRODUCTION

That period in history which made India and China desirable fields for European trade also created the desire to discover a short route from European ports to those important markets. Nations and individuals engaged in the effort to find a more satisfactory means than by travelling overland or long voyages around the continent of Africa. In the quest for a short route many notable discoveries were made. The discovery of America, of Canada, and of Hudson Bay each aroused opportunities of far reaching importance.

Discovery promotes trade more than anything and when it can be shown that the exportation of our commodities and manufacturers may be vastly increased, that several branches of foreign trade may be highly improved, that navigation in general may be greatly extended, and our shipping increased, then it deserves to be considered as a thing of high consequence to the public and an object worthy of national attention and encouragement.

Lord Selkirk's recognition of the potential advantages of Hudson Bay over eastern ports can be properly classed as discovery and in utilizing this route for the transportation of the first settlers into Western Canada, he established beyond any possible doubt its importance and practicability.

No matter how important a discovery may be its great potentialities become practically useless unless they be linked up with world traffic. The importance of the Hudson Bay route lies in the fact that not only does it give signal advantage in local conditions but it also opens up new avenues for trade with foreign countries.

For trade between the Maritime provinces and Western Canada, and as an international highway permitting the free flow of traffic from Europe to the Orient or from the Northern States to Europe, the Hudson Bay route stands pre-eminent.

For saving in time and distance no other route can compare with it. Between England and Eastern Asia via Suez is about 16,000 miles and via New York and San Francisco about 11,000 miles, and via Port Nelson and Prince Rupert less than 8,000 miles. From Port Nelson to Vancouver is over eleven hundred miles shorter than from Montreal to Vancouver, equivalent to more than two days saving in time across Canada.

The completion of the Hudson Bay Railway is essential if we would place Canada in a strategic position to engage in a grander development of our resources and to achieve a dominant position among nations.

MONTREAL AND PORT NELSON

Montreal is the foremost grain shipping port on the continent of North America.

Millions of public money have been spent on the port of Montreal and the St. Lawrence ship channel.

The Dominions Royal Commission in 1917 recommended that all eastern ports be deepened to 38 feet. -

The St. Lawrence ship channel between Montreal and Quebec is being deepened to 35 feet.

August 10, 1925, the S.S. Metagama scraped on the bottom of the channel and suffered considerable damage.

There is complaint that the water level is lowered. It usually happens that a greater quantity of water is displaced from the higher levels when the outlet is enlarged and obstructions removed which would otherwise hold the water and maintain levels.

The Chief Engineer, Montreal Harbor Commission, exclaims—"Thank God there is only one St. Lawrence." "Montreal has nothing to fear."

Future generations might not be so enthusiastic if the present spoliation is permitted to continue and the mighty St. Lawrence River reduced to a rivulet or a creek.

Over thirty-nine million dollars of public money are already charged to the account of the Harbor of Montreal and more expenditure is said to be necessary.

Montreal Harbor Commission expended over fourteen million dollars on harbor facilities and improvements in 1924.

The total cost of the Hudson Bay Railway to date is approximately fourteen million dollars provided for out of the sale of Manitoba, Saskatchewan and Alberta lands and this amount, therefore, is not properly a charge against public revenue, but rather a credit to the three western provinces.

The Government has sold approximately fifty million dollars worth of these lands for the express purpose of building a railway to Hudson Bay.

Montreal Harbor is closed five months in the year.

Evidence supports the claim that Port Nelson being a tidewater port can be made an all year port.

The distance from the centre of production in Canada to seaboard is greater than the distance from production centres to seaboard in countries which compete with Canada.

Montreal is seventeen hundred miles from centre of production in Canada.

Port Nelson is only seven hundred miles, a saving of one thousand miles over Montreal and is the same ocean distance as Montreal to Liverpool.

Estimated rates on wheat, according to Mr. Cowie, Chief Engineer, Montreal Harbor Commission, give Port Nelson an advantage over practically all other competing routes to United Kingdom ports, and a substantial saving over Montreal.

Montreal ships less than one half of Canada's exportable surplus of wheat.

Why not open another route for American shippers through Canadian ports in the same manner as Canadian shippers have been obliged to use American ports.

Port Nelson not only holds a central position in Canada it is also practically the centre of the North American continent. The same distance in direct line from Port Nelson to Calgary, about 1,100 miles includes the following American cities—Miles City, Montana; Pierre, South Dakota; Mason City, Iowa, and Madison, Wisconsin.

A glance at the map of North America, shows clearly that the Hudson Bay Railway with proper feeders, forms the only natural inlet for many of the imports of the North Central States. This is traffic that should be flowing through Canadian channels to the very great advantage of Canadian Railways, shipping companies and traders, it will flow through these channels as soon as the shrewd American business man is shown where he can save a cent by so doing. This is a most important factor in any discussion of this great question and most certainly should not be overlooked in any arguments, which may be advanced by sectional interests in different parts of Canada, as to the feasibility or economical aspect of speedily and properly opening up this route.

NAVIGATION

There is ample information accessible to those who desire to satisfy themselves that the Hudson Bay and Straits are navigable. Opinions differ as to duration of navigability, but reliable evidence goes to show that Bay and Straits may be navigated practically every month in the year. Long before the use of steam sailing vessels accomplished the navigation of the Bay and Straits, and it is remarkable that very few mishaps have occurred in a period extending over four hundred years.

Admiralty records are said to contain evidence of a voyage to Hudson Bay in 1517, almost a century before Henry Hudson's celebrated voyage.

Ships wintered at Port Nelson in 1611-1612.

The "River of the Strangers" (Churchill) was discovered by a Danish navigator in 1619.

The first trading vessel entered Hudson Bay in 1668, since which time there has been practically continuous communication between England and Hudson Bay.

Hudson Bay has been the scene of several naval battles.

Troops and immigrants have been transported from England to Canada by way of Hudson Bay.

Seven hundred and fifty vessels in one hundred years with loss of only two ships establishes a record comparing favorably with any other route.

Thirty-eight modern tramp steamers passed through Bay and Straits in 1914.

Numberless instances can be cited as evidence of the practicability of the route. On almost every occasion, however, when the question of building a railway to the Bay has been discussed in Parliament, and notwithstanding that there is abundant evidence available, enquiry as to the feasibility of the route has invariably been thrust into the discussion.

In 1882 Sir Richard Cartwright asked the Government to procure, if possible, the assistance of the Imperial Government to determine the question as to the navigability of the Bay and Straits. The Canadian Government was evidently not successful in securing the aid of the Imperial Government in this matter and in 1883 they despatched an expedition, "The Alert," under Commander Gordon. The description of the "Alert" is interesting. In the Manitoba Free Press, May 6, 1886, appears the quotation: "An important consideration is the steamship "Alert" herself. Is she the best vessel procurable for the purpose? In Lieut. Gordon's report of the expedition he says that the Alert's engine is only equal to about fifty horse power. Surely a vessel with such limited power is hardly fitted to explore the straits and when it is remembered how inadequate her capacity for carrying coal is—240 tons for a five month's voyage—it is reasonable to attribute the delays and struggles mentioned in the report as due to this cause alone, and delays and struggles which would not have occurred had a more powerful and more suitable vessel been employed. Owing to her deficient steam power it was impossible for the Alert to push her way through the ice, and yet the vessels of the Allan Line easily push their way through greater ice obstacles in the Gulf of St. Lawrence every spring on their voyages to Quebec. . . . Beyond the fact that she is strongly built she is without question one of the worst ships that could possibly be sent out. In confirmation of this statement there is the testimony of a number of captains of sailing ships, who know her qualities well and who are also experienced in the kind of navigation which she encountered."

The editor comments on the above as follows:—"This is the coracle the dingy which the Dominion Government saw fit to send out to prod ice, and investigate the straits and yet we are asked to believe that the Government is friendly to the project. A fifty horse power punt with capacity for 240 tons of coal, is sent out on a five months' voyage, to investigate such a project! It could not even shatter ice far less formidable than that which is no impediment to the Allan vessels in the Gulf of St. Lawrence, and yet the Dominion Government proposes to decide this great question by the report which this little shallop, with its toy engine, its handful of coal, and that notoriously striving person Lieutenant Gordon, will make. Nevertheless it is actually proposed to send this vessel out again this year to report on this most vital question. Lieutenant Gordon is a Government employee in the meteorological service at Toronto. He is saturated with the eastern prejudices against this country. His report shows upon every page that he is a feather-bed navigator. He spent all his time pushing his way through the coast ice, and that in the Straits of Belle Isle, and has cumbered his report with repeated allusions to ice which he found elsewhere than in the Straits. It is evident that he and his craft are equally useless, if a fair investigation of this matter is to be secured. The "Alert" should be replaced by a powerful steamer fit for his task, her commander should be superseded by some man of pluck and experience in this particular navigation, and the expedition ought to get underway earlier than before. If this is done, we are confident that no difficulty exists serious enough to prevent the navigation which is to make the Canadian Northwest prosperous beyond all expectation."

In addition to the foregoing other expeditions were despatched in 1897, 1903-1904, 1911-1914, for the purpose of reporting on conditions in the Bay and Straits. Neither of these expeditions remained in this region during the whole year, consequently do not report on conditions between November and June, when it is claimed that the ice is locked to the shore and therefore cannot be bothering ships.

As far back as 1744, Mr. Dobbs, writing on conditions in the Bay and Straits wrote as follows:—"It is probable that during the whole winter from October to March there is no ice in the Strait to obstruct passage into or out of the Bay, for a ship which chanced to be closed up with ice in an inlet, by the breaking of ice got out and came through the strait at Christmas without finding any ice in the strait to prevent her passage."

Col. R. H. Webb, present Mayor of Winnipeg, passed through the Strait in February 1904, and encountered no ice.

Dr. Robt. Bell, F.R.S., credited with seventeen years' experience in northern waters says:—"It is impossible that there should be at any time in the twelve months difficulty in navigating the Straits for they are upon tide water. . . . Why, navigation through the Straits should be particularly easy, because while there may at times be floating ice, there are no rocks and islands upon which to go ashore."

Captain William Hackland, in Hudson's Bay Company service for 39 years:—"Straits never freeze, no reason why steamships should not navigate at any time."

Mr. J. W. Tyrell, geologist, who passed through Straits several times, writes:—"As to icebergs, they are occasionally met with in Hudson Straits being sometimes carried along the north shore by the prevailing current from Davis Strait, but they are by no means of frequent occurrence, and not one tenth as numerous as off the Straits of Belle Isle."

Captain Bernier, explorer, nineteen years' experience in northern water:—"The Hudson Bay and Strait are open to navigation the year around, but as far as the Strait is concerned, icebergs block the way in places according where the current into or out of the Bay drives them. With wireless stations established so that ships could be directed in their course the Hudson Bay ports would rank amongst most important on the continent, owing to the very appreciable difference in distance to Europe compared with that of other ports." In 1924, on his return from the north he wrote as follows:—"The nightmare and terror of the Hudson's Bay are about passed and with aids to navigation, wireless, proper ships and proper men, it will be safer than the St. Lawrence, because there are very few shoals and the water is uniform and nearly constant daylight during the summer, which enables a mariner to see around him."

Ellis. (A Voyage to Hudson Bay):—"As to the dreams of the last age, about the danger and difficulty of the navigation through Hudson's Strait and Bay, it is now out of the case; we know that this navigation is far from being so perilous as it is represented. This is the more manifest from a fact, the truth of which is indisputable, and that is, the Hudson's Bay Company ships, returning year after year without any disaster."

BUSINESS IN AND OUT OF HUDSON BAY

Available references to business in Hudson Bay are meagre, nevertheless what evidence has become public reveals that considerable profit has resulted from transactions arising from that source.

A charter was granted in 1670 to the Hudson's Bay Company and the capital placed at £10,500. There is mention of dividends of 50% being paid in 1684 and 1688 and 25% dividend in 1689.

In 1688 the Company claimed as losses £38,332.15s. on account of disturbance of their trade by French traders from Canada. Another reference to this period claims that the French burned down, plundered and spoiled the forts and factories of the Company, upwards of £120,000 of the Company's property being destroyed.

In 1690 Hudson's Bay Company Charter confirmed by Parliament and stock raised to £31,500.

1721 Company stock raised to £94,500.

1748 Trade between London and Hudson Bay. Exports £5,012.12.3. Imports £30,160.5.11.

For many years up to 1770 York Factory had annually sent to London at least 30,000 skins, in 1790 supply had dropped to 20,000 skins due to competition of French traders.

1770 the Hudson Bay Company insured ships and goods for the first time in their history. Five per cent. per annum on each ship £2,000. Warehouse £3,000.

1809 Company petitions Chancellor of Exchequer for assistance to maintain colony, claiming that it required an annual outfit of British manufactures of between forty and fifty thousand pounds sterling.

1859 proposed scheme of Transcontinental Railway (Grand Trunk). Company offers to sell out for £1,500,000.

1862 Company transfers stock to International Finance Association which took over and paid for Company shares and issued new stock to the public to an amount which covered a large provision for new capital for extension of business and at a great profit to themselves.

1865 the Annual Report shows:—

| | | | |
|----------------------|------------|----|---|
| Money in investments | £346,601 | 11 | 9 |
| Money in trade | 743,985 | 7 | 7 |
| | <hr/> | | |
| | £1,090,586 | 19 | 4 |

Return on investments and trade £93,580 1s. 9d.

1869 Company transfers territory to Imperial Government for £300,000 retaining several thousand acres surrounding their posts and two sections of land in every township surveyed during fifty years from the time of transfer.

1861-1874 American Whalers made about fifty voyages. Annual catch \$124,000. Eleven years produced 22,241 gallons of sperm oil, 81,265 gallons whale oil, 399,729 pounds whalebone, which sold for \$1,371,123. In the year 1864 the catch amounted to \$427,637.00.

1875 Sir John Schultz in House of Commons stated:—"Hudson Bay Company who carried on whaling business in two rivers captured 7,749 whales yielding 768 tons of oil worth upwards of £27,000 in the London market.

1882 Mr. Bannerman, South Renfrew, stated in House of Commons:—"During the last eight or ten years a large and increasing trade has been done in Hudson Bay. By a return to the American Government we find that in 1880 between \$600,000 and \$700,000 worth of furs, whalebone and oil was exported from Hudson Bay into the United States in foreign vessels. These vessels trade there with the native population without restraint and without contributing to the revenue of this country."

1884 "The steamer "Diana" owned by the Hudson's Bay Company is a refrigerator vessel and is regularly in the trade of Ungava Bay. She takes cargoes of fresh salmon to England where it is sold for from 1s. 6d. to 2s. 6d. per pound. Some of her cargo has been re-shipped to Australia.

1925. Free Press, August.—"The Hudson Bay country is a wonderful district for metals," stated John R. Cadawallader, prospector of London, Ont. "Many United States schooners are in the Bay trading with the natives and they are charging the Indians and the Eskimo many times the value of any article they give in exchange for fur. The Bay is full of commercial fish and that would be a great traffic for the railroads, as it looks as if the Bay could never be fished out."

When it is realized that commercial traffic has been carried on in the Bay for centuries, we can only then begin to appreciate the amount of business that is and has been going on with only limited advantage to Canada. No doubt there are in the Archives of the Government of England, France, United States and Canada, records of vessels and evidence of traffic to and from this source sufficient to convince the most sceptical as to the importance of railway connection with this great region.

CONDITIONS IN HUDSON BAY AND STRAIT

Dr. Bell of the Geological Department, Ottawa, who had spent six seasons about Hudson Bay, testified in 1883 that:—"In regard to the Bay itself there is no date for the opening or closing of navigation, because the Bay is open all the year round, like the ocean in corresponding latitudes. It is strictly correct to say that the Bay is open during the winter. There is a margin of ice along the shallow water but it never extends so far but a man on the beach can see the open water on a clear morning. The rivers falling into the Bay are open for an average of six months. This is amply proved by the records kept at the various posts of the Hudson's Bay Company, on the Bay, and which, being kept by the officials for over fifty years, have been presented to the Canadian Government." He also goes on to say, "The records of the Hudson's Bay Company as presented to the Government in 1880, show that the Hayes' River, at York Factory, for an average of 53 years was open on the 15th of May. The Nelson closes much later than does the Hayes', if indeed it can be said to close at all."

It is interesting, then to note the comparison between the opening of the harbors of York and Montreal, though a fortnight is here given against York to clear the river and again in the fall when ice first forms:—

| | Montreal | York |
|-------------------|-----------|-----------|
| Opening of harbor | 1st May | 1st June. |
| Closing of harbor | 25th Nov. | 10th Nov. |

“This proves conclusively that the harbor at York is open and clear of ice for five and a half months of the year, and that vessels could approach docks between those dates. At a port on Nelson River these dates would be extended.” Dr. Bell declares that the temperature of Lake Superior below the immediate surface is 39 deg. Fahr., along the east shore of Hudson Bay it averaged 53 deg. in the summer months. “Bathing in Hudson Bay more comfortable than the Gulf of St. Lawrence.” “Sun shines longer there than more southern latitudes.” “Bay ice, being light and rotten after it breaks away from the shore offers little obstruction to a steamship.”

“The greatest danger and delay from the ice is in the entrance into the Strait for the first 40 leagues, from thence the quantity is less, and they pass on with less difficulty, and after getting into the Bay the north-west side is freest from ice. Since therefore, the greatest danger from the ice is in passing the Strait, and so few accidents have happened in so many years, the navigation, I think cannot be called dangerous. The ice that is formed in Bays and Rivers in winter does not break up until it begins to thaw upon the shores in March and April. Yet even then good pilots know how to avoid it, and get into the eddy tide, out of the current, where the ice is most open, but these difficulties would lessen every day if trade were opened. In the spring ‘the ice without the harbor (Churchill) is drove to the sea on April 20th’.” (Dobbs 1744).

“On the first of June the trading schooner starts on her trips along the coast to gather up the winter’s catch of furs.” (W. A. Archibald, 1884).

“As the prevailing winds are from the north or north-west, it is most probable that Gabriel Strait (between Resolution Island and Baffin’s Land) will be the one for steamers to take, as they will by that means escape the ice driven by the winds through the main or south entrances. It is stated that sailing ships are not taken in that way because the currents are very strong, and the north shore being very high they are liable to be becalmed and thrown on the rocky shores.” (Dr. C. N. Bell.)

Capt. J. Tabor, of New Bedford, says:—“Steamers would have great advantage over sailing vessels, as they could steam inside of all obstruction from ice, water being bold close to shore, tides strong, say six to seven miles, but quite regular.”

Professor Hind, Toronto, says:—“The only hindrance to an entrance into and through Hudson Strait early in June arises from the obstruction presented by the two ice streams coming from East Greenland and Baffin’s Bay, down the west coast of Davis Strait. It is reasonable to suppose that these ice streams are less encountered late in May or early in June than in July.”

"Fox Channel is the main entrance from the northward. Sir Edward Parry, when on his second voyage in search of a north west passage, says that on the 1st of December, in a bay of Fox Channel, where he wintered, while none of the "old ice" was visible, that part of the sea about them was covered with a very thin sheet of young ice, having spaces of clear water. In June of the following year the ice in their wintering bay, where they sawed it was four feet, and that on that date a good deal of ice was still attached to the land.

"As the ice from Fox channel affords the bulk of what passes through Hudson's Strait, it is important to know from an eminent authority like Parry that as late as June the ice still remained attached to the shores for it is evident that if it is there, it cannot be at the same time bothering ships in the Strait, and it points out, what many men who have been through the Strait early in June have insisted on, that the month of July is the worst of the whole year for entering the Strait, but the floe ice, being more affected by winds than bergs, is acted on by the prevailing northern and north-western winds. There is always open water between the rocks and the great body of ice on the north side.

"Some of the Fox Channel ice may find its way into the bay, but the greater part of it swings to the east when leaving Fox Channel and passes through Hudson Straits into the Atlantic. The ice met in Hudson Bay is formed there and does not come from Fox Channel. . . There is no particular channel through Hudson Straits or Bay.

"The general set of the current through Hudson Straits is from west to east. There is a constant southerly set down Fox Channel swinging to east around cape Dorset and between Salisbury and Nottingham islands joined in the vicinity of this point by the current between Mansel island and cape Wolstenholme. From the east end of the straits part of the Arctic current flowing down the west side of Davis straits enters Hudson Straits by Resolution island and flows west along the north shore of Hudson Straits as far as Big island; at this point this current is met by the current from Fox Channel and Hudson Bay and diverted southward across the Straits to the south shore of Hudson Straits. In other words the current in Hudson Straits may be divided into three movements, the easterly current from the west end of Hudson Straits on both sides as far as Big Island to Cape Chidley. At points these currents attain a great velocity. At some places seven miles per hour at spring tide. They are generally stronger along the shore than at mid-stream. . . There are no icebergs in Fox Channel or Hudson Bay and comparatively few in the west end of Hudson Straits, but numerous in the eastern portion of the Straits. Coming from Davis Straits they enter Hudson Straits on the north side, with the aforementioned current, passing up Hudson Straits on the north side of Big Island; there meeting the eastern flow of the current, they swing across the straits to the south and pass eastward to the Atlantic along the south shore. Bergs are rarely if ever seen west of Charles Island. These bergs originate presumably in Greenland. Field or pack ice only comes down Fox Channel. . . Ice in the Straits

is drifting field ice although it may be temporarily jammed. (Capt N. E. Freakley, Hudson's Bay Co., Navigation and Marine Superintendent for the Department of Railways and Canals at Port Nelson.)

"The tides in Hudson Straits rise for 30 to 40 feet, and run about six or seven miles an hour, and at every turn, where there is ice, many authorities say that much breaking up occurs, and that steamers could take advantage of this while sailing vessels are at a standstill. (C. N. Bell.)

Capt. Hackland reports that fogs are very uncommon, as the general conditions for producing them are wanting in either Bay or Straits.

Log books of nine American whalers, who have been whaling in the Bay, make only one mention of fogs in the passage through the Straits. The Canadian Government has had meteorological stations at York Factory and Moose Factory and as the observers are the officers of the Hudson's Bay Company, we can take their returns without fear of their being too favourable or the reverse:—

| York Factory | |
|-------------------------------|----|
| Fogs observed 1876 | 18 |
| No returns 1877 | |
| Fogs observed 1878 | 4 |
| Moose Factory | |
| Fogs observed 1878 | 6 |
| Fogs observed 1879 | 17 |
| Fogs Jan. to Aug. return 1880 | 2 |

"It would be very interesting to compare this return with one from the lower St. Lawrence. Maury's Physical Geography of the Sea, shows very distinctly that the cold waters from the Hudson and Davis Straits reach down to latitude 45, and east to longitude 40 west before meeting with the Gulf Stream. 'By this discovery we have clearly unmasked the very seat of that agent which produces the Newfoundland fogs.' No such influences are at work in the Hudson Strait or Bay, except possibly where the warm summer water of the Bay mingles with that of the Strait, and it is fortunate that reports show that no trouble occurs at that point from fogs, and that one of the great advantages the Bay offers to navigators is the immunity from them as well as shoals and reefs, the islands and shores shewing great depths of water close up."

From Maury's explanation of ocean currents it is reasonable to assume that while congestion of ice and bergs occurs at the meeting point of the polar current and the Gulf Stream, the menace of bergs in the northern region is not so great on account of their being scattered over a larger area before being driven together along the coasts of Labrador and Newfoundland.

Whatever difficulties arise from the conditions of ice in the Bay and Straits at this time, it must be borne in mind that at this particular season of the year and in this region the sun shines much longer than in regions farther south, thus giving almost continuous visibility for observing conditions over a very wide range and avoiding possible dangers.

The following table shows the different durations of sunlight between Ottawa and Fort Simpson in the same latitude as Hudson Strait:—

| | Ottawa | Simpson |
|----------------|--------|---------|
| Latitude | 45°26' | 61°52' |
| Hours sunlight | H. M. | H. M. |
| May 1 | 14 18 | 16 05 |
| June 1 | 15 16 | 18 39 |
| June 21 | 15 30 | 19 14 |
| July 1 | 15 24 | 19 02 |
| August 1 | 14 32 | 16 56 |
| August 31 | 13 08 | 14 08 |
| Hours sunlight | Hours | Hours |
| May | 456 | 538 |
| June | 462 | 570 |
| July | 464 | 558 |
| August | 423 | 481 |
| | 1805 | 2398 |

Fourteen days and six hours extra sunlight is a distinct advantage in favour of the northern latitudes, at a time when ice conditions are reported to be the greatest obstacle to navigation.

RESOURCES OF HUDSON BAY REGION

In answer to the question asked by the Select Standing Committee on Immigration and Colonization in the House of Commons, Ottawa, 4th April 1883:—"In a general way, in the Hudson Bay territories, are there many useful minerals?" Dr. Bell's answer was:—"As far as we know there are, but very little search has been made there. I can, however, mention numerous minerals which are already known to exist. They embrace iron, as hematite, magnetite caly, ironstone and rich manganiferous iron ore on the east main coast, copper in its native state and in various combinations; lead, silver, gold, molybdenum, antimony, manganese, chromium, phosphate of lime, jade, chrysophrase, agate, cornelian, malachite, jasper, serpentine, jet, lazulite, petroleum, asphalt, peat, anthracite, bituminous coal, lignite, limestone, granite, sandstone and sand for glass making, moulding sand, clays, marls, ochres, gypsum, iron pyrites, salt, medicinal waters, sheet mica, soapstone and plumbago. These are all known to occur, many in various parts of the territory, and most of them certainly well worth looking after." Mr. Dickson, formerly in the service of the Company, thus refers to the mineral deposits on the shores of the Bay:—"At a certain point on the east coast of James Bay there is a vein of magnetic iron, so extensive, that, when examined by a practical English miner, in 1865, it was pronounced by that gentleman to be one of the most valuable veins of ore in existence.

Mr. Hoffman, chemist of the Geological Survey of Canada, analyzed a specimen of anthracite from Long Island on the east coast, with the following results:—

| | |
|-----------------------------|--------|
| Fixed carbon | 94.91 |
| Volatile combustible matter | 1.29 |
| Water | 3.34 |
| Ash | 0.35 |
| | 100.00 |

Mr. Hoffman reported also on the composition of the Moose River lignite as follows:—"A piece of this lignite immersed in water for over three days, remained apparently unaffected; it had not disintegrated nor imparted any coloration to the water. This specimen having been kept in the laboratory for months, may be regarded as having been thoroughly air-dried.

Two proximate analyses by slow and fast coking gave:—

| | Slow coking | Fast coking |
|-----------------------------|--------------|--------------|
| Fixed carbon | 45.82 | 44.03 |
| Volatile combustible matter | 39.60 | 41.39 |
| Water | 11.74 | 11.74 |
| Ash | 2.84 | 2.84 |
| | <hr/> 100.00 | <hr/> 100.00 |

Hearne, the discoverer of the Coppermine River and later Governor of Fort Prince of Wales (Churchill), declares the season for salmon in the neighborhood of the Churchill River begins at the latter part of June and ends about the middle or latter part of August. Salmon are so plentiful near Churchill River that he has known upwards of 200 fine fish being taken out of four small nets at one tide within a quarter of a mile of the Port. Professor H. Y. Hind says:—"If Hearne be correct in his statement that the season begins the latter part of June, it is a fortnight or three weeks earlier than the season for salmon on the Labrador coast." Professor Hind, who made a study of the geography and character of the Hudson Straits and Bay says:—"The season on the coast of northern Labrador south of Hudson Strait is from six weeks to two months later than the season on the coast of Hudson Bay at and for some distance north of Port Nelson. This is established by the testimony adduced in relation to the approach of fish to the shores wholly apart from other considerations." Besides the whale, cod and salmon fisheries the waters of Hudson Bay and the rivers falling into it contain many excellent oil-producing and edible fish. Dr. Bell reports finding "pike, perch, herring, white fish, sea trout, sculpin and caplin, besides pike, pickerel, carp, chub and speckled trout in their proper waters. White porpoise abound, and the walrus and narwhale are killed in considerable numbers." Hearne says he saw the walrus in such numbers on the sea shore north of Churchill, "that the whole beach seemed to be in motion." He also enumerates "mussels, crabs, starfishes, whilks, periwinkles, cockles, scallops, and many other kinds which are found on the beaches in great plenty."

Water power is one of the great assets of the North Country. On the Nelson River horse-power is calculated for eleven rapids, and aggregates 3,859,000, divided as follows:—

| Approximate head in feet H.P. | | |
|-------------------------------|------|-----------|
| Limestone rapid | 85 | 1,140,000 |
| Long Spruce rapid | 85 | 1,140,000 |
| Kettle rapid | 96 | 1,290,000 |
| Gull rapid | 67 | 900,000 |
| Birthday rapid | 24 | 320,000 |
| Grand rapid | 20 | 270,000 |
| Rapids above Sipiwesk Lake | 31 | 416,000 |
| Bladder rapid | 10.6 | 147,000 |
| Whitemud fall | 30 | 403,000 |
| Ebb-and-Flow rapid | 11 | 148,000 |
| Rapids above Cross Lake | 45 | 605,000 |

In addition to these there are water powers on the Churchill, Burntwood and Saskatchewan Rivers.

The most important spread of lands capable of being cultivated, extends westerly from the Nelson River to near Burntwood and Wekusko Lakes, northerly to the southern shore of Southern Indian Lake. The area of the basin thus defined is upwards of 10,000 square miles equivalent to more than six million acres. Though this very large area cannot be described as all agricultural land, it contains about the proportion to be expected in a rolling country, of cultivable upland and valley bottom with interspersed areas of muskeg and tracts that are insufficiently drained. Between May 1st and August 31st, Fort Chipewyan, on Lake Athabaska, less than 100 miles north of Port Nelson has 255 hours more sunlight than Ottawa. This extra sunlight is the means of promoting rapid growth and early ripening of vegetation.

Out of one hundred and eighty million acres of land adjudged to be cultivable in the three western provinces, less than forty million acres are under cultivation. One of Canada's greatest needs is immigration, and the opening up of the Hudson Bay route affording a short haul to the sea will provide an irresistible attraction to our American friends to come over the line and occupy the rich lands in Western Canada. Give our American friends a chance to get near a seaport and see how quickly they will come in and avail themselves of the opportunities which we have to offer them.

HISTORY OF RAILWAY

One occasion for a railway to Hudson Bay might be said to date as far back as 1753 when Capt. La. Corne planted the first seed in Western Canada on the banks of the Saskatchewan River. This event followed by the successful growth of cereals by the Red River Settlers, and culminating in the shipment of the first car load of wheat to Glasgow in 1877, established the splendid achievement of producing the highest grade

of wheat then known in the world. Such an achievement could have only one effect—the desire to produce and market in as cheap a manner as possible. The Hudson Bay route was the obvious answer to the problem and accordingly became a matter of intense interest to the people of the West.

On March 1st, 1880, Mr. Bannerman of South Renfrew introduced Bill No. 46 to incorporate the Winnipeg Hudson Bay Railway and Steamship Company. In 1881 Mr. Boulton introduced Bill No. 28 to incorporate the South Saskatchewan and Hudson Bay Railway Company. In both these cases grants of lands were given to the extent of 6,400 acres per mile. The Winnipeg and Hudson Bay Railway Company proposed to build to Port Nelson, whilst the South Saskatchewan and Hudson Bay Railway had as its objective the port of Churchill. In 1884, Sir J. A. Macdonald introduced a resolution on Tuesday April 15th, as follows:—“That it is expedient to authorize the Governor-in-Council to make a free grant of not more than 6,400 acres per mile in Manitoba and 12,800 acres per mile in the North West Territories in aid of the construction of a railway from Manitoba to the Hudson Bay.” He said:—“These two companies have been negotiating, amalgamating, severing and amalgamating again, however that may be, it has been found that unless we made a free grant there would not be a sufficient inducement for capitalists to undertake the construction of such a railway, and the Government thought well to accede to their request that the grant should be a free grant. One thing is clear, that the Legislature and the Government of Manitoba have made up their minds that they must have that railway.”

An indication of the confidence in this Western enterprise can be taken from the action of the people of Manitoba through their elected representatives. On May 2nd, 1885, the Government of Manitoba passed an act granting aid to the Hudson Bay Railway to the extent of \$1,000,000. In May 1888, aid to the extent of \$5,000 per mile, on March 31, 1890, aid to the extent of \$3,000 per mile, and on April 18th, 1891, aid to the extent of \$1,500,000.

In 1887 the road was built for a distance of 40 miles, north-westerly in the Province of Manitoba, from the old Race track immediately west of Winnipeg and ending in the neighborhood of Shoal Lake, Man. As the result of this railway being built the Manitoba Government handed over bonds equivalent to \$1.00 per acre, amounting to \$256,000.00. The Government of Manitoba was unable to secure title to the lands and therefore brought action for recovery of the \$256,000.00. The projected line of the Hudson Bay Railway and Steamship Company followed the east side of Lake Manitoba and northerly beyond the then boundaries of Manitoba into the North West Territories. The idea as revealed in Sir J. A. Macdonald's speech in introducing the resolution was that the 6,400 acres within the province should be obtained from the land lying between Lake Manitoba and Lake Winnipeg, and when they had passed beyond the boundary of Manitoba that they would then receive 12,800 acres per mile. Construction on the line was stopped on account of

insufficient funds to carry on and also owing to the fact that the building of the Red River Valley Railway from Emerson to Winnipeg, allowed the Northern Pacific to enter Manitoba, and furnish a measure of competition against the monopoly hitherto maintained by the Canadian Pacific Railway. The project of building to the Bay was more or less lost sight of for some time. However, about ten years later Mackenzie Mann and Company, who had been successful in railway construction in the West, undertook to build a railway from Gladstone to Dauphin and Winnipegosis, known as the Lake Manitoba Railway and Canal Company.

At this juncture negotiations were concluded with Hugh Sutherland for the acquisition of the Winnipeg and Hudson Bay charter with the result that as soon as the Railway was completed to Dauphin and Winnipegosis they immediately proceeded to build westerly into Saskatchewan one route going by way of Swan River along the Porcupine mountains and westerly to Prince Albert, whilst another route was projected by way of Grand View into what was then the North West Territories.

The reader will recall that the grant of 12,800 acres per mile was to have been obtained from the North West Territories, although the intention of the Government when giving the grant was that the 12,800 acres per mile should be taken from the land in the then North West Territories lying to the north of the boundary of Manitoba. Mackenzie and Mann, however, evidently interpreted the intention differently and proceeded to build into the North West Territories in a westerly rather than north-easterly direction. Roughly speaking they received 5,000,000 acres of land towards this purpose.

These conditions prevailed until after the formation of the Provinces of Saskatchewan and Alberta in 1905. It was upon the formation of these Provinces that the demand for the Hudson Bay Railway again became insistent, with the result that the Hon. Frank Oliver, on behalf of the Government of Canada, entered into an agreement with Mackenzie and Mann, to the effect that, if they would relinquish further claim in respect of the Hudson Bay charter, and that if they would build from a point on the Dauphin-Prince Albert line to the Saskatchewan River, that the Government would set aside, and sell, sufficient homestead and pre-emption lands to complete the railway from the Saskatchewan river to the Hudson Bay. Mr. Hudson, June 5, 1924, refers to this in the following terms:—"The statutory provisions impressing the character of a trust upon moneys derived from the disposition of certain Dominion Lands, for the purpose of the Hudson Bay Railway, is found in the statutes of 1908, chapter 20, section 28. As you will observe, this statute does not expressly recognize the trust, but the discussion in Parliament at the time the act was under consideration clearly shows that this was the purpose. You will find this discussion in the 1908 Hansard, volume 6, page 11, 125, and if you will refer particularly to page 11, 129, you will find Hon. Frank Oliver's statement outlining the position. In short, it is this, that, up to that time there had been a standing statutory provision in force for very many years, providing for a statutory grant of 12,800 acres per mile for the construction of a railway to Hudson Bay.

"Mr. Oliver took the position that this statutory provision was in the nature of a mortgage upon all the undisposed of lands in the north-west, for the purpose of obtaining the construction of the railway. His language on page 11, 130, is this: 'There is, as it were, a mortgage standing against the lands of the northwest in respect to aid to a railway to Hudson Bay. The necessity of such an outlet is greater than ever before, and is more impressed on the minds of the people than ever before. Therefore, in wiping out the mortgage upon the lands on behalf of a railway to Hudson Bay, if we undertake to do as we propose in this act, it is necessary that we should place something in its stead, and that is the proposition that I desire to lay before the house.'

"Then lower down on the same page: 'I have said that it was necessary to provide in some way for the construction of a railway to Hudson Bay, and when we were wiping out the liability as it might be called, against the lands of the west, it was necessary that we should make some other adequate provision to meet the case.'

"Again: 'We believed that by the revival of this privilege we would create a new source of revenue to the Dominion treasury that would be adequate to meet the responsibilities which would have to be assumed by the construction of a railway to the Bay.'

"On page 11, 138: 'But I am insisting on the pre-emptions provision as a means of ensuring the early building of the railway to Hudson Bay.'

"On page 11, 148, Mr. Oliver goes on to discuss the probable cost of the railway and estimates that \$15,000,000 would be sufficient.

"At the foot of page 11, 150, he states 'WE HOPE BY THIS PROPOSITION TO BE ABLE TO SECURE THE EARLY CONSTRUCTION OF THE RAILWAY, AND WE HAVE EVERY CONFIDENCE THAT THE BURDEN UPON THE GENERAL TREASURY OF THE COUNTRY WILL NOT BE THEREBY INCREASED TO THE AMOUNT OF ONE CENT.'

"On page 11, 152, near the foot, he says: 'At the same time we propose to relieve the mortgage, so to speak, which today lies against the 6,500,000 acres of land of the northwest in respect of the Hudson Bay Railway. As long as that provision remains in the statute books, it is a notice by Parliament to the world that, in the estimation of Parliament, it is a proper policy to grant 6,500,000 acres of land in order to construct a railway from the Saskatchewan to Hudson Bay. That is not in accord with the policy of this government, nor is it in accord with its administration, but by passing this bill, we relieve ourselves of any claims, past or present or future against that 6,500,000 acres.'"

Mackenzie and Mann accordingly built a line from Hudson Bay Junction to the present site of The Pas on the Saskatchewan River.

The Government then proceeded to make surveys and let contracts for the construction of a line from the Saskatchewan to Hudson Bay. Mr. W. A. Bowden, chief engineer, Department of Railways and Canals says:—"The surveys demonstrated that a very easy line could be got to Port Nelson; that a line having heavier construction over a considerable area, and also necessitating a considerable stretch of construction across the tundra,

could be got to Churchill. By tundra, I mean that character of country in which the moss is practically submerged in water—a small skin of moss overlaying a lot of semi-liquid peat which in turn rests upon perpetually frozen material of depth unknown and is made up chiefly of water. The construction to Churchill meant a longer line. Nelson had the obvious and positive advantage of being a shorter line. The difference is anywhere from 67 to 82 miles. The same line would be used to a certain point on the route from which the branches would turn either to Nelson or to Churchill. The actual final determination between the two did not take place until August 1912. The call for tenders was made on alternative routes. Our estimates showed the Nelson line to be about \$3,000,000 cheaper than the Churchill line. The contractor's tender was about \$4,000,000 more for the Churchill than the Nelson.

"In view of the difference in the tender costs there was a strong preference for Nelson—there were other reasons. The expenditure on the Hudson Bay system is not for the purpose of furnishing protection for vessels, but to get the grain overseas as cheaply as possible, and the extra length of line to Churchill, with its consequent extra cost of maintenance, would offset a very considerable capital expenditure at Nelson. For 10,000,000 bushels development Churchill would be cheaper than Nelson; but for twenty-five or thirty millions Nelson terminals would cost less than Churchill. The railway has an advantage of four millions and operating preference is all in favour of Nelson.

"The route is not adding to our congestion on the seaboard but is really giving us an addition to the spout from the western provinces, it is of real advantage to the west and relieves the transcontinental roads of a substantial amount of traffic during the season of congestion. A very moderate volume of traffic would pay operating expenses if the full existing through rate was equitably divided between the railway and the steamships."

"I believe in the feasibility of the route. The route would do for grain and livestock going out, coal, structural steel and package freight coming in. Practically the size of the vessel is determined by the capacity of the port."

"I have always considered Nelson the better terminus. Armstrong favoured Nelson from 1912, but I am quite willing to take my share of that responsibility. . . . The actual construction was not further than fifty or sixty miles out of Le Pas when the contract was let for Nelson. Churchill was not rejected as impossible for railroad construction. Churchill was rejected on purely commercial grounds, such as mileage, which apart from operating cost in the future means a definite increase in the cost of the railway. And for a large harbor development Nelson would outstrip Churchill anyway. You would be passing up a good port to go to an inferior port. By an inferior port I mean requiring a larger expenditure of money because for a large development Churchill would actually cost more than Nelson. For a small development Churchill would be cheaper than Nelson. But the extra cost of the railway would destroy that advantage and the extra rail haul of the grain remains in perpetuity."

The Government of Sir Wilfrid Laurier succeeded only in constructing a bridge across the Saskatchewan River when a change of Government took place. After investigation by the Borden Government the line was continued and the selection of Port Nelson as a terminus confirmed. Work proceeded until 1918 when instructions were given to suspend operations. In 1922 instructions were given to tear up the rails. This act roused such a storm of protest in the West that the order was withdrawn. Some time later propaganda was put forth discrediting this project which resulted in intensifying the determination of Western people for the route to be completed. An Association was formed to give expression to public opinion. This Association has carried on with the result that public opinion in the West has found expression in meetings, resolution, letters to representatives and a petition to the Government of Canada which has already been signed by more than 150,000 people in the West.

An inquiry in the House of Commons, as to the cost of the Hudson Bay Railway and Harbor, in May 1924, elicited the following information:—
Mr. Tobin:

1. What was the total cost of the Hudson Bay Railway on the 31st March 1924?
2. How much money did the government receive from the sale of lands, the proceeds of which were to apply to the construction of the said railway?
3. What will be the probable cost to finish the said road?
4. Are there any other available lands which could be sold in the said territory, the proceeds of which could be applied to finish the road?

Hon. Mr. Copp:

1. \$14,459,941.26, capital expenditure to March 31, 1923. Expenditure to March 31, 1924 is not yet available.
2. There was no specific authority under the Dominion Lands Act, 1908, for the sale of land for the purpose of Hudson Bay Railway construction, but pre-emptions and purchased homesteads were sold under the provisions of the said act. The net amount collected on account of pre-emption sales up to March 31, 1924, was \$15,984,134.89, from purchased homesteads \$3,145,421.84, a total of \$19,130,556.73.
3. \$6,250,000 (estimate) exclusive of terminals or harbor developments.
4. By order-in-council of the 16th March, effective 20th March, 1918, P.C. 651, pre-emption and purchased homestead provisions of Dominion Lands act were suspended and these provisions were subsequently deleted from the act by the amendment of 1918, chapter 19, section 28.

Mr. Hudson member for Winnipeg, May 25th 1925, enquired in the House of Commons, Ottawa, as follows:—

Mr. Hudson:

1. What was the total area of land disposed of as pre-emptions under the provisions of the Dominion Lands act passed in the year 1908?
2. What was the total price for which these lands were sold?
3. What amount has actually been received in respect of the sale of these lands?
4. What is the total expenditure to date (a) for the construction of the Hudson Bay Railway (b) for the Harbor works at Port Nelson?

Mr. Copp:

1. 12,763,000 acres approximately including entries since cancelled.
2. \$38,289,120 approximately.
3. To March 31st, 1925, \$16,312,959.95.
4. The expenditure to March 31, 1925, for the construction of the Hudson Bay Railway was \$14,902,571.17 and for the Harbor works at Port Nelson \$6,244,599.49.

In Mr. Hudson's enquiry there was no mention of homestead sales, but taking the figures in Mr. Tobin's enquiry, which drew the information that over three million had been collected on this account, it is accordingly revealed that the Government of Canada has collected over nineteen and one half million dollars and expended approximately fifteen million dollars, leaving on hand a cash balance of about four and one half million dollars. Moreover, there still remains uncollected, on account of pre-emptions alone, almost twenty-two million dollars and to this twenty-two million dollars should be added the amount collectable on account of homestead lands, which figures were not asked for and consequently not given. No doubt enquiry will reveal that approximately fifty million dollars worth of land has been disposed of with the primary purpose of furnishing funds to pay for the building of a Railway to Hudson Bay.

PORT NELSON

The conditions at Nelson are described by Mr. J. B. Tyrell, mining engineer, who says:—"Nelson harbor is a shallow V-shaped basin of water, with the water flowing over a bottom of hard, stony clay. There is no bar at the mouth of the Nelson. The bottom all across the mouth is hard, stony clay, with a few boulders lying on it. That extends right up into the V-shaped basin, so that if one dredged a straight channel down into the stony clay, it would stay dredged just as long as you wanted it. It would not fill in. The current and tide would keep it quite clear. It would be more inclined to scour. . . . The ground is hard, stony clay. It is very hard and is swept smooth and clean by the water. It extends to the channel on the east side and I am satisfied that it extends underneath the channel and that it can be dredged easily. . . . There is no silt in the Nelson river except what is broken down by the storms from the northwest bank of the estuary. The upper portion of the stream is a fairly clear-water river that does not bring silt. The river current is rapid and the tide ebbs and flows very fast.

"With aids to navigation, and a reasonable amount of dredging that could be made a good safe channel. Of course, across the wide mouth of the Nelson river you have very shallow water, so that when there is a storm, even a northeasterly storm, the waves break on that shallow bottom far out, so it is hardly fair to say that you get the full forces of the storm in the harbor. You do not. The breakers are far out. The storm has spent itself by the time it gets in."

Capt. Anderson, chief hydrographer (Senate Report 1920) says:— "Port Nelson is as good a port as you can get there. . . You could put fifty ships in Port Nelson. . . Personally I think Port Nelson is the better place for a harbor. A boat with 20ft. draught will go into Nelson. The channel is a quarter of a mile wide, and mud flats are all dry at low water and nothing but channel is left. It is about half a mile wide. . . Hudson Straits are never frozen over."

With respect to the work of constructing a harbor at Port Nelson, chief engineer McLachlan's evidence before the Senate Committee is herewith quoted:—"There is a natural channel running up and down the axis of the estuary. . . In the natural channel the surface is paved with stones. . . It is always one stone deep. . . Once we got to the edge of the natural channel we knew we were getting to the ships anyway and we knew we could get a good foundation. . . Our terminals contemplate keeping a ship even when it is lying against the wharf, lying like a ship at anchor.

"We have a bridge about two thirds of a mile long built from the shore out towards the natural channel. Then we have an island. . . nine thousand feet is the length of the island. . . taking 450 feet for a boat so as to work it out evenly there would be accommodation for twenty ships. This is my proposed scheme at the present time. The island is half a mile long now. . . The island will be built of timber crib work. It will have 30 feet of water at low tide, 50 feet at high tide. On the front face it will be about five hundred feet wide with a retaining wall at the back and we will fill it in with dredging as far as we can. We built the front with cribs the same as they do in Quebec or Montreal. We propose to found there deep water wharves on the edge of the old natural channel. . . Our cribs will be founded on hard pan but we will have little or no hard pan to excavate. That has all been carefully studied and this wharf built so that there will be very little hard material to be dredged. None of the deep water wharves are built.

"I consider that we deserve a great deal of credit for being able to build the bridge. It has been in place for three years and the ice has never moved it. . . .

"At Port Nelson we have a dry dock 200 feet long and 46 feet wide. . . .

"I will not say there is no silt coming down the river, because the whole place is muddy, but I do not believe there is any change occurring in that estuary; I believe now, it is the same as it has been and will be the same a hundred years from now.

"The current varies. It is about three knots in the channel opposite our works. I know that eight miles out from the island the maximum current on ebb is about five miles an hour. Ten miles out the current is 5-7 miles an hour and eleven and a half miles out it is seven and a half

miles an hour. At thirteen miles out where the current reaches its maximum it is eight miles an hour. From there on it gradually gets less and from there to the ocean it gets less all the time. . . .

"The average tide of the island during the neap week would be eleven feet. The average tide at the island for spring week would be about fifteen feet. . . . We have had a twenty foot tide at Nelson caused by wind.

"There is a long deep hole 6 miles long. In one place the water is 90 feet deep. . . . The deep hole extends from mile 8 to mile 13. . . . At mile 8 in the deep hole the width is already about twelve hundred feet. . . . At the upper end the width of the deep hole is about 2,700 feet. . . . The whole ground is considered by marine men to be good. . . . The present channel between the ocean and Quebec is 1,000 feet wide.

"Ice comes down from the west coast. It comes apparently from the northern section of the bay and keeps drifting south and finally melts away.

"The original channel on the charter, that is Captain Anderson's charter we were using until we knew better, or in the absence of better information. . . . Last winter we knew that the charter which was prepared and published was not right and we went back and thoroughly surveyed the entrance to Port Nelson all over again, with the result that we got the channel in a different place from the one shown on the charter. The result is that we effected a great improvement in the entrance to Port Nelson. We now have a channel there that has 20 feet of water at low tide. That means that when you have the height of the least tide to be expected you get a channel that is 33.7 feet deep. . . . The channel I got this summer enables us to navigate within 12 miles out. . . . The channel that we found this summer has a direction which really leads to the shore more quickly than the channel coming straight up the estuary would lead and we can build a beacon on shore and another one behind it a mile or so that will probably be about 90 or 100 feet high, and we can see those from deep water in Hudson Bay. . . . The great advantage of the new channel found this summer is that at first it leads towards one shore and then towards the other and finally up the centre of the estuary, so that beacons can be built on shore so close that a ship can see the first pair and steer towards them keeping them in range until the second pair comes in line and then along these until the third pair come in line and then up towards these until well into the estuary.

"Beacons can be built that can be seen from deep water in Hudson Bay into our works at Nelson without using buoys at all, and that would lengthen navigation.

"You can come into Port Nelson at any time; you can see the beacons we have on shore or the beacons that we will build. . . . As long as there is no fog I do not see that there will be any danger in navigating up through the channel.

"The amount of dredging we have done at Nelson is inconsiderable with what we have to do. The equipment we had at Nelson was not at all suitable for the work we had to do. For years, ever since the war broke out, we have had the greatest possible need for a couple of dipper dredges and the Government would not buy them. They said the war is over and we do not want to incur additional expense at present. The result is that we have been fiddling with the matters of dredging and we have not made any real attempt.

"For any work we do at Nelson we can employ men six and a half months and do it pretty cheaply, but when we have to go out in the water it is quite different. . . Work at Nelson has to be done at the same time as the harvest in the Northwest. . . If we had the railroad you could probably employ men just as is done for harbor."

The Dominions Royal Commission in 1917 after hearing evidence in all parts of the Empire from practical shipping men and naval architects recommended that the approaches and harbors of the chief ports of Eastern Canada should be given a working draught of thirty-eight feet. Unlike Montreal, which is practically an inland port and where the deepening of the channel requires excavating for a distance of 226 miles. Port Nelson is a tidewater port and the character of material to be dredged is readily adaptable to any desired depth. Mr. J. B. Tyrell testifies "that if one dredged a straight channel down into the stony clay, it would stay dredged just as long as you want it."

SUMMARY

Conditions pertaining to the Hudson Bay route may be briefly summarized:—

Practically continuous navigation of Bay and Straits for over 250 years involving a traffic in merchandise and resources from which Canada derives little or practically no benefit.

Resources in fisheries, furs, minerals, lands, timber and water powers awaiting commercial and industrial development.

A seaport in the centre of Canada.

A short route from the centre of production to world markets.

An all year sea route subject to ice hazard during the month of July when almost complete visibility prevails.

An International Highway for world commerce.

A natural (not subsidized) incentive to immigration.

A means to give full effect to a Canadian trade policy.

An incomplete railway and seaport bought and more than paid for, but not delivered.

Approximately fifty million dollars worth of Western Canada lands sold for the specific purpose of building a road to Hudson Bay. Twenty million dollars collected—about fifteen million dollars used—about five million dollars in the possession of the government—and between twenty five and thirty million dollars outstanding and collectable.

Twenty five thousand dollars per mile is considered a fair estimate for railway construction. This includes grading, laying steel, water tanks round houses, etc. In this case, however, the grade is finished so that this estimate could be properly reduced to a lower figure, say \$20,000 per mile. We then have 92 miles to complete at an estimated cost of \$1,840,000, which would still leave a substantial balance to the credit of the road in the hands of the Government, and the collectable amounts utilized for the further purposes of placing the route in first class condition to accommodate traffic.

Millions of dollars of material and equipment such as ties, rails, bridges tanks, stations, storehouses and stores, dwellings, locomotives, steam shovels, dredges, ships, steam and motor boats, etc., all lying idle and wasting—a decaying monument to the infidelity of our public men.

The history of the western provinces has been throughout a struggle for a proper appreciation of their intrinsic worth. The dominant eastern forces on the other hand have invariably regarded the west as a convenient scene for exploitation. The value of western resources and production cannot always be so regarded and some day the ugly sisters will realize that "Cinderella" has captivated Prince "Capital" who will enthrone her in her rightful position.

In language that applies equally well today, Mr. W. F. Luxton, Editor, Free Press, wrote May 6, 1886:—"This project is the bright hope of the Canadian Northwest. Compared with it, many other most important things are insignificant. It is nature coming to disperse the barriers which she herself has raised. Our natural disadvantage is that our land is too remote from the sea coast and the markets of the old world; our wonderful natural advantage is that in Hudson Bay we have a sea coast near at hand, and via Hudson Bay we have a shorter route to the old world than that of our neighbors in the east. While nature has placed us far inland, in the very centre in fact, of the broadest portion of the Continent, she has placed near at hand the great inland sea that will solve the difficulties of our position. Our lands are the most fertile in the world, and the opening of the Hudson Bay route must instantly bring us as near to European markets as are the Provinces in the east or the States to the south and east. The prospect is magnificent! No more exciting offer was ever held out to any people than that which is now extended to us by the Hudson Bay Railway and the great natural privileges with which it is to connect us. Let us see to it that no man dares to oppose this great country in this its great desire."

